

### **REMARKS**

In response to the Office Action mailed March 24, 2004, the Applicant respectfully requests reconsideration.

Applicant notes with appreciation the allowability of claims 4, 5, 13, 14, 23 and 24 if rewritten in independent form to include all the limitations of the respective base and intervening claims. However, in view of the following discussion, Applicant declines to rewrite these claims in independent form as suggested by the Office Action.

Independent claims 1, 10, 19 and 20 have been amended solely for clarification, not in response to any rejection or art of record. Applicant does not rely on these amendments for patentability.

#### **1. Claims 1-9 Patentably Distinguish Over Zacharia in View of Aggarwal**

Claims 1-3 and 6 stand rejected under 35 U.S.C. §103(a) as purportedly being unpatentable over “Collaborative Reputation Mechanisms in Electronic Marketplaces” by Giorgos C. Zacharia (“Zacharia”) in view of U.S. No. 6,487,541 (Aggarwal). Applicant respectfully traverses this rejection because the combination of Zacharia and Aggarwal is improper, and even if the combination were proper (which it is not), such combination would fail to teach or suggest act (E) recited in claim 1.

##### **1.1 Discussion of Zacharia**

The discussion of Zacharia set forth in Applicant’s previous response filed December 19, 2003, is hereby incorporated by reference in its entirety. As set forth in that discussion and as conceded in the Office Action (page 3, first full paragraph), Zacharia does not teach paths between the first and second entity having a first length equal to a shortest length between the first entity and second entity. Rather, Zacharia discloses considering paths that do not exceed a *maximum length*.

Also discussed in Applicant’s previous response, but not mentioned in the Office Action, is that Zacharia fails to disclose or suggest producing a personalized ratee reputation by weighting a combined first rating by an amount according to *a shortest length* between the first entity and the second entity. Rather, Zacharia discloses weighting a personalized ratee reputation based on a function of *the number of rating paths*.

### 1.2 Discussion of Aggarwal

Aggarwal is directed to predicting a rating associated with a user based on a predictability graph, and providing recommendations of items for sale in an e-commerce environment. (Col. 1, lines 9-13). Aggarwal discloses searching a predictability graph using a breadth first search to determine a shortest path(s) connecting a user with another user who has rated an item. (Fig. 1, item 110; Fig. 4; col. 6, lines 47-55). Based on the shortest path(s) found by searching the predictability graph, a predicted rating of an item  $j$  by a user is calculated. (Fig. 1, item 112; col. 6, lines 65-67). A prediction value is calculated for each determined shortest path, and the predicted rating is determined by calculating a weighted average of these calculated prediction values. (Col. 7, lines 11-18, equation (3)).

Thus, although Aggarwal discloses calculating prediction values for each shortest path, and calculating a weighted average of these calculated predictions (i.e., combining the calculated prediction values), Aggarwal does not teach or suggest *weighting this weighted average by an amount according to the length of the shortest path(s)*.

### 1.3 The Combination of Zacharia and Aggarwal is Improper

The combination of Zacharia and Aggarwal is improper because there is no motivation to combine the teachings of Aggarwal with those of Zacharia. As set forth above, Zacharia discloses considering paths that do not exceed a maximum length, and provides no motivation to consider paths of a shortest length. The Office Action states that one skilled in the art would be motivated to make such combination “to ensure the rating of the first entity comes directly from the second entity.” However, a direct rating of the first entity by the second entity is not ensured by considering the shortest paths. In fact, equations (2) and (3) provided by Aggarwal indicate that predictor values  $(s_i^*, t_i^*)$  between several intermediate users  $(user_i \rightarrow user_{i1} \rightarrow \dots \rightarrow user_{iq})$  along a shortest path are considered when calculating a prediction for a path. Further, the only *rating* considered is the rating  $r_{user_{iq}, s}$  of the rated item  $j$  by the last user in the path,  $user_{iq}$ . Thus, the Office Action’s purported motivation to combine Zacharia and Aggarwal does not exist. Therefore, the Office Action has failed to establish a *prima facie* case of obviousness.

1.4 Claims 1-9 Patentably Distinguish Over Any Combination of Zacharia and Aggarwal

Even if it were proper to combine Zacharia and Aggarwal (which it is not), such combination would not teach or suggest all of the limitations recited in claim 1. Claim 1 as amended recites:

“For a population of entities, a method of determining a personalized ratee reputation of a first entity from the perspective of a second entity associated with the first entity by one or more rating paths, wherein a rating path comprises one or more rating links, each rating link defining a rating of a rated entity provided by a rating entity, wherein each rating path has a length defined as a number of rating links comprised in the path, and each entity comprised on one of the rating paths has a level defined as a number of rating links between the entity and the second entity, the method comprising computer-implemented acts of:

- (A) performing a breadth-first search beginning at the second entity to determine, from the one or more rating paths, one or more first rating paths that have a first length equal to a shortest length between the first entity and the second entity;
- (B) for each determined first rating path, identifying a third entity on the first rating path that has a level equal to one less than the first length;
- (C) for each identified third entity, determining a first rating of the first entity provided by the third entity;
- (D) combining the first ratings to produce a combined rating; and
- (E) producing the personalized ratee reputation **by weighting the combined rating by an amount according to the first length.**”

No combination of Zacharia and Aggarwal would teach or suggest producing a personalized ratee reputation *by weighing the combined first ratings by an amount according to the first length*. As set forth above, such a weighting is not taught or suggested in Zacharia. Aggarwal discloses combining (e.g., calculating a weighted average of) prediction values calculated for paths having a shortest length between a first and second entity, but simply does not teach or suggest weighting the combined prediction values by an amount according to this shortest length. Thus, regardless of how Zacharia and Aggarwal are combined, the resulting combination would not teach or suggest weighting combined ratings by an amount according to the length of a shortest path between entities to produce a personalized ratee reputation. Moreover, Aggarwal serves as strong evidence that it was not obvious at the time of Applicant’s invention to weight combined ratings based on the determined shortest length of a path. Although Aggarwal discloses determining a shortest length between entities, Aggarwal does not even mention using such determined length to weight combined prediction values. If obvious,

why was such a weighting technique not disclosed or suggested by Aggarwal? In fact, the only motivation for weighting combined ratings of shortest paths based on the length of the shortest paths is found in Applicant's specification. The use of such motivation as the basis for an obviousness rejection would be an impermissible use of hindsight analysis.

In view of the foregoing, claim 1 patentably distinguishes over Zacharia in view of Aggarwal. Accordingly, Applicant respectfully requests that the rejection of claim 1 under §103(a) be withdrawn. Claims 2-9 each depend from claim 1 and are patentable for at least the same reasons. Accordingly, the rejections of claim 2, 3, and 6-9 should be withdrawn.

## **2. Claims 10-18 Patentably Distinguish Over Zacharia in View of Aggarwal**

Claims 10-12 and 15-18 stand rejected under §103(a) as purportedly being unpatentable over Zacharia in view of Aggarwal. Applicant respectfully traverses this rejection.

For the reasons set forth above in Section 1, the combination of Zacharia and Aggarwal is improper. Further, as should be clear from the discussion in Section 1, even if Zacharia and Aggarwal were combined, such combination would not teach or suggest all the limitations recited in claim 10. Specifically, such combination would not teach or suggest a system for determining a personalized ratee reputation of a first entity from the perspective of a second entity, the system comprising, *inter alia*: a path-searching module to perform a breadth-first search beginning at the second entity to determine one or more first rating paths that have a first length equal to a shortest length between the first entity and the second entity, and a ratings combining module to generate the personalized ratee reputation by **weighting a combined rating by an amount according to the first length**.

In view of the foregoing, claim 10 patentably distinguishes over Zacharia in view of Aggarwal. Claims 11-18 each depend from claim 10 are patentable for at least the same reasons. Accordingly, the rejections of claims 10-12 and 15-18 should be withdrawn.

## **3. Claim 19 Patentably Distinguishes Over Zacharia in View of Aggarwal**

Claim 19 stands rejected under §103(a) as purportedly being unpatentable over Zacharia in view of Aggarwal. Applicant respectfully traverses this rejection.

As set forth above in Section 1, the combination of Zacharia and Aggarwal is improper. Further, as should be clear from the discussion in Section 1, even if Zacharia and Aggarwal were combined, the resulting combination would not teach or suggest all of the limitations recited in

claim 19. Specifically, such combination would not teach or suggest a system for determining a personalized ratee reputation of a first entity from the perspective of a second entity, the system comprising, *inter alia*: means for performing a breadth-first search to determine one or more first rating paths that have a first length equal to a shortest length between the first entity and the second entity; and means for producing the personalized ratee reputation **by weighting a combined rating by an amount according to the first length**, as recited in claim 19.

In view of the foregoing, claim 19 patentably distinguishes over Zacharia in view of Aggarwal. Accordingly, Applicant respectfully requests that the rejection of claim 19 under §103(a) be withdrawn.

#### **4. Claims 20-28 Patentably Distinguishes Over Zacharia in View of Aggarwal**

Claim 20 stands rejected under §103(a) as being unpatentable over Zacharia in view of Aggarwal. Applicant respectfully traverses this rejection.

As set forth above in Section 1, the combination of Zacharia and Aggarwal is improper. Further, as should be clear from the discussion in Section 1, even if Zacharia and Aggarwal were combined, the resulting combination would not teach or suggest all the limitations recited in claim 20. Specifically, the resulting combination would not teach or suggest a computer program product comprising a computer readable medium and computer readable signals stored on the computer readable medium that define instructions that, as a result of being executed by a computer, instruct the computer to perform a method of determining a personalized ratee reputation of a first entity from the perspective of a second entity, the method comprising, *inter alia*, acts of: performing a breadth-first search to determine one or more first rating paths that have a first length equal to a shortest length between the first entity and the second entity; and producing the personalized ratee reputation **by weighting a combined rating by an amount according to the first length**.

In view of the foregoing, claim 20 patentably distinguishes over Zacharia in view of Aggarwal. Claims 21-28 each depend from claim 20 and are patentable for at least the same reasons. Accordingly, the rejections of claims 20-22 and 25-28 should be withdrawn.

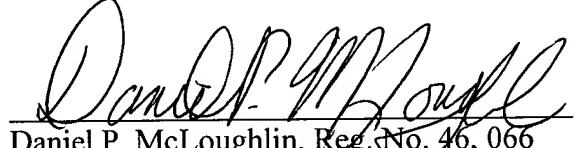
### CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,  
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